

JPRS 75473

10 April 1980

USSR Report

AGRICULTURE

No. 1227



FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

10 April 1980

USSR REPORT
AGRICULTURE
No. 1227

CONTENTS	PAGE
MAJOR CROP PROGRESS AND WEATHER REPORTING	
Field Work in Kuban' Region Increasing in Tempo (Yu. Semenenko; IZVESTIYA, 5 Mar 80)	1
Field Preparations by Grain Growers in Stavropol'skiy Kray (V. Oliyanchuk; IZVESTIYA, 5 Mar 80)	3
Briefs	
Concern for Winter Crops	5
Opening of Navigation	5
LIVESTOCK FEED PROCUREMENT	
Advantages of Mixed Feed Described (S. Burtsev; EKONOMIKA SEL'SKOGO KHOZYAYSTVA, Dec 80).	6
Briefs	
Timber Waste for Feed	9
LIVESTOCK	
Livestock Winter Maintenance Reviewed (S. Abishev; SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA, Jan 80)	10
Meat, Milk, Fodder Production Problems in Estonia (I. Kallas; RAHVA HAAL, 16 Jan 80)	14
Increasing Output of Livestock Products in Lithuania (SOVETSKAYA LITVA, 18 Jan 80)	19

CONTENTS (Continued)

Page

REGIONAL DEVELOPMENT

Better Introduction of Scientific Advances Into Agriculture (B. P. Semenenko; SEL'SKOYE KHOZYAYSTVO KIRGIZII, Feb 80)	24
Accomplishments, Tasks in Belorussian Livestock Production (P. Rusakov; ZVYAZDA, 10 Feb 80)	29
Belorussian Preparations for Spring Grain Operations (Editorial; ZVYAZDA, 19 Feb 80)	31
Brestskaya Oblast Farm Operations, Output (Ya. Ya. Sokolov; ZVYAZDA, 4 Mar 80)	34

AGRO-ECONOMICS AND ORGANIZATION

Ways to Lower Prime Cost of Grain Discussed (N. M. Studenkova, M. I. Sklyarova; ZERNOVOYE KHOZYAYSTVO, Mar 80)	36
Estonian Agriculture Minister Interviewed (Kharal'd Aleksandrovich Myannik , Kheino Tynisovich Vel'di Interview; SOVETSKAYA ESTONIYA, 3 Feb 80)	44

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK IN KUBAN' REGION INCREASING IN TEMPO

Moscow IZVESTIYA in Russian 5 Mar 80 p 1

[Article by Yu. Semenenko (Krasnodarskiy Kray): "Spring in the Kuban'"]

[Excerpts] The sowing units have moved out onto the fields throughout the kray. Mineral fertilizer top dressings have been applied to 1.5 million hectares of winter grain crops. This year the leading farms, teams and brigades are competing to obtain 50 quintals of grain per hectare.

The breath of spring continues to become more noticeable in the Kuban'. The soil is drying out and hundreds of units are moving out onto the plowed strips. In the southern rayons the arable land is being prepared and early spring crops sown and in the northern zone the work of applying a top dressing to the winter crops is continuing.

A check carried out recently on the condition of the wheat and barley winter plantings revealed that they endured the winter very well. However, a soil analysis disclosed a nitrogen deficiency. Thus, nitrogen and complex mineral fertilizers are being applied in order to accelerate the growth of the plants. The following information was furnished by the kray's agricultural administration: top dressings have been applied to almost 1.5 million hectares of winter crops. A second application of fertilizer is being applied to those fields which are to be used for obtaining strong grain (and there are more than 700,000 hectares of such plantings in the kray). Many farms are applying root top dressings to the wheat and this is producing especially high increases in yield.

The farmers in Mostovskiy Rayon are carrying out their field work in an organized manner. Preferring not to wait until the soil has dried out on their land, they are taking advantage of each good hour of time to carry out moisture retention work, cultivate and smooth out the soil and sow as much peas and oats as possible. None of the machine operators need to be coaxed. All of them are aware of the importance, at this time of year, of utilizing each moment of time to maximum advantage. Within a brief period of time,

the rayon's kolkhoz and sovkhos workers succeeded in sowing almost one half of all of the areas set aside for peas and oats. The preparation of the ridges for potatoes is being carried out at a high tempo.

Good news is being received from Anapskiy Rayon.

The rice growers of the Kuban', having vowed to produce 1 million tons of "white gold" this year, have moved out onto the fields. The workers attached to specialized farms are completing their work of cleaning canals and repairing their hydraulic engineering installations and irrigation networks. Certain operations are in full swing at the present time: ridging of the intra-check plot canals, breaking of subsurface soil and leveling off of the check plots. Special attention is being given to those areas where the rice must be sown very early and its seed placed deep in the soil. This method produces a noticeable increase in yield.

Owing to the fact that many farms are experiencing a moisture deficiency in the soil, special importance is being attached this year to the rates for the carrying out of the field work. The quality of such work is of equal importance. The Kuban' grain growers are employing leading agrotechnical methods -- cultivation by layers and thorough leveling off of the soil and complete destruction of weeds. The farms are obtaining good results using VNIS-R type harrows and other agricultural implements which dry out the soil to only a minor degree. Liquid organic-mineral mixtures are being employed on an extensive scale. The sowing work is being carried out using first class seed of regionalized varieties. At seminar-conferences held recently in the kray, in the Adygeyskaya AO and in various rayons, discussions were held on methods for raising the yields being obtained from the Kuban' fields, tactical methods were refined and specific measures were defined for introducing scientific achievements and leading experience into operations. All of these questions were discussed in detail during meetings of the party-economic aktiv, held at many of the kolkhozes and sovkhos.

In a number of measures calculated to bring about a substantial increase in cropping power, an important place was occupied by work concerned with raising the fertility of the Kuban' chernozem soils. Last year the kray's grain growers plowed 32 million tons of organic fertilizers into the soil, or an average of 7 tons per hectare of arable land. This year, during a period of less than 2 months, more than 5 million tons of organic materials have been moved out onto the fields and placed in storage. Many farms have begun adding this valuable fertilizer to the soil.

This year the Kuban' grain growers have resolved to obtain 37-38 quintals of grain from each hectare and to produce 9.5-10 million tons. The initiators of a competition are serving as a fine example of how to fulfill one's socialist obligations. This movement has become truly massive in nature this year. There are already hundreds of kolkhozes, sovkhos, brigades, detachments and teams in the kray this year, which have been assigned more than 500,000 hectares of land and which are striving to obtain 50 quintals of cereal grain and 75-100 quintals of rice and corn grain from each hectare. The field work being carried out in the Kuban is increasing in tempo.

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD PREPARATIONS BY GRAIN GROWERS IN STAVROPOL'SKIY KRAY

Moscow IZVESTIYA in Russian 5 Mar 80 p 1

[Article by V. Oliyanchuk (Stavropol'skiy Kray)]

[Excerpts] A discussion we held with the secretary of the Novoaleksandrovskiy Rayon Party Committee Ya. Chumachev concerned the manner in which the grain growers are making preparations for their future harvest. And the following thought was heard being expressed: the achievements and miscalculations of the past year are being analyzed over and over again in all of the agricultural collectives -- a year characterized by complicated and extremely unfavorable weather conditions. But even despite these conditions, a number of farms succeeded in obtaining yields which were 5, 6 and at times 10 quintals higher than those being obtained by their neighboring farms. Thus, a high culture of farming serves to ensure success even during dry years. And the secretary of the rayon committee confirmed this thought by citing the example of the Rossiya Kolkhoz, where the workers succeeded in obtaining an average of 35 quintals of grain per hectare from vast areas of land. At the present time, the experience of the Rossiya Kolkhoz is being followed by many other farms.

Novoaleksandrovskiy Rayon is located in the northwestern part of Stavropol'skiy Kray and the Rossiya Kolkhoz -- on the very border with Krasnodarskiy Kray. The vast fields in this region are already turning green in color and appear to be dense and succulent, despite the fact that the forest strips without exception are covered with a silvery frost.

"Thus it would seem that winter has passed -- snowless and windy and one which did not please us in terms of snowstorms and drifts" stated the chairman of the Rossiya Kolkhoz, V. Vrana, "nevertheless the winter crops endured and became stronger and the grain will be strong. There can be no doubt in this regard."

Fine preparations have been made at the Rossiya Kolkhoz for the forthcoming spring period. The kolkhoz workers are of the opinion that a fine harvest will be obtained this year and that the kolkhoz will confirm its right to

bear the title of collective of a high culture of farming. I shared these impressions with the head of the Agricultural Department of the rayon party committee, B. Voronnin. Boris Mikhaylovich noted that this same spirited optimistic mood is characteristic of all of the grain growers in Stavropol'skiy Kray. The winter crops are in good condition in all areas and, distinct from previous years, almost no resowing is required. The workers in Stavropol'skiy Kray are directing all of their strength and energy towards ensuring that an abundant harvest will be obtained this year for the homeland.

7026

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

CONCERN FOR WINTER CROPS--Astrakhan', 5 Mar--Despite the fact that cold temperatures still prevail in the lower Volga region, the workers at the Zarya Kommunizma Kolkhoz in Kharabalinskiy Rayon are not waiting until the onset of warm weather, but rather they have begun applying a top dressing to their winter crop and perennial grass plantings. This work is being performed by a mechanized brigade. The machine operators are applying one and a half quintals of mineral fertilizer to each hectare of winter crops and to alfalfa of past years -- 7 quintals of mineral fertilizer. Within a matter of days, the farmers applied a top dressing to all of their winter crop fields and to almost one half of their perennial grass plantings. Other farms throughout the rayon have commenced this work. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 Mar 80 p 1] 7026

OPENING OF NAVIGATION--Kishinev--With the opening of navigation on the Dnestr River, passenger and cargo vessels are again plying this main water artery of Moldavia, which intersects its territory for a distance in excess of 600 kilometers. The very concept of "navigating" is a comparatively new one for the Dnestr River region, since it was only several decades ago that the river became navigable. The decision was made to use this capricious river for transport purposes. A steamship agency was created in the republic and two large river ports and ten moorings were built. More than 200 passenger and cargo vessels are plying the Dnestr River at the present time. Along this water artery, which is playing an increasingly greater role in the republic's economy, construction materials, agricultural equipment and mineral fertilizers are being transported to cities and villages and to giant plantations engaged in the production of grapes, fruit and vegetables, located on the flood-plain of the river. This year, the passenger vessels will carry more than 2 million passengers on voyages along the picturesque shores of the Dnestr River to the Black Sea. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 Mar 80 p 1] 7026

LIVESTOCK FEED PROCUREMENT

ADVANTAGES OF MIXED FEED DESCRIBED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 12, Dec 80 pp 73-74

[Article by S. Burtsev, senior scientific worker of the Council for the Study of Productive Forces of USSR Gosplan: "Advantages Offered by the Use of Mixed Feed"]

[Text] The development of livestock husbandry on an industrial basis, the creation of industrial livestock complexes and poultry raising farms and the technology for production processes on these farms require a strengthening of and improvements in the feed base, an increase in the production of feed and improvements in the quality of such feed.

At the present time, a great amount of attention is being given to industrial feed production and particularly to the production of mixed feed. The efficient use in livestock husbandry of forage grain and other types of feed is serving to ensure proper feeding for the animals using mixed feed that is balanced in terms of nutrients.

At leading livestock husbandry complexes which use high quality mixed feed, 5.7-6 feed units are being expended during fattening operations per kilogram of increase in live weight in cattle and for pigs 4.3-4.5 feed units, that is, roughly two times less than on farms which use unbalanced feed.

Improvements in feeding are raising the productivity of the animals to a considerable degree. Thus, owing to the feeding of full-value and balanced mixed feed in the public sector as a whole, the egg production of hens increased from 132 eggs in 1965 to 202 eggs per laying hen in 1977. On farms subordinate to Ptitseprom [Upravleniye ptitsevodcheskoy promyshlennosti; Administration of the Poultry Raising Industry], 1.8-2 feed units are being expended for every 10 eggs, whereas at non-specialized farms which are not being adequately supplied with mixed feed such expenditures exceed 3 feed units.

If all of the forage grain employed for cattle feed was prepared in the form of mixed feed, an annual saving of roughly 30 million tons of grain would be

realized. Such a quantity of grain would be sufficient for producing 5-5.5 million additional tons of meat.

Comrade L.I. Brezhnev, in a report delivered before the July (1978) Plenum of the CPSU Central Committee, stated: "We have assigned ourselves the task of ensuring that all grain being delivered to livestock husbandry is fed to the animals in a processed and balanced form. This calls for an acceleration in the development of both the state mixed feed industry and the production of mixed feed at sovkhozes, kolkhozes and at interenterprise facilities"*.

During the past few years, state, economic and interenterprise mixed feed facilities have been built throughout the country. The production capabilities of the state mixed feed industry are making it possible to produce more than 50 million tons of mixed feed and the capabilities of the economic and interenterprise facilities, with double-shift operations -- 30-35 million tons of mixed feed. However, owing to a shortage of protein components, full use is not being made of the capabilities of the plants. In addition, the enterprises often produce mixed feed of low quality.

At the same time, considerable resources are available for compensating for the shortage of protein feed and reducing the protein deficit. Pulse crops that are grown in almost all areas throughout the country are considered to be the cheapest source for obtaining plant protein. The protein contained in such crops exceeds by 2.2 times the protein content in grain crops. The greatest success in the growing of pulse crops has been achieved on farms in the Bashkir ASSR, Ul'yanovskaya and Kuybyshevskaya oblasts and in a number of oblasts in the Ukraine, where the pea yields have been on the order of 22-26 quintals per hectare.

Taking into account the requirements of the national economy and also those of the mixed feed industry for pulse crops, a need exists for increasing the state procurements of such crops. The state procurements of peas by those republics and oblasts which are obtaining high yields of this crop should ideally be raised. This applies in particular to the Ukrainian SSR, the Bashkir ASSR and Ul'yanovskaya and Kuybyshevskaya oblasts, all of which are capable of becoming the principal suppliers of peas for the mixed feed industry.

Great importance is being attached to developing the production of soybeans, a valuable crop in view of the fact that its grain contains 35 percent protein. Measures aimed at increasing soybean production, presently being carried out throughout the country, are bringing about an expansion in the plantings and increases in the gross yields for this crop. In 1977, 786,000 hectares of soybeans were sown and in 1978 -- 835,000 hectares; the gross outputs amounted respectively to 513,000 and 638,000 tons and the yields --

* L.I. Brezhnev. "On Further Development of Agriculture in the USSR." Report delivered before the Plenum of the CPSU Central Committee on 3 July 1978. Decree of the Plenum of the CPSU Central Committee, adopted 4 July 1978. Moscow, Politizdat, 1978, p 23.

7 and 7.6 quintals per hectare. Favorable conditions for expanding the soybean plantings are to be found in Moldavia, the Kuban' and in the Crimea. On the basis of data accumulated over a period of many years at strain testing stations in Moldavia, 18-24 quintals of soybeans are being obtained from each hectare of non-irrigated land and from irrigated land -- 26-30 quintals.

Beyond any doubt, soybeans grown in the Primor'ye region and also in Moldavia, the Kuban' and in other regions must become one of the most important crops for supplying the mixed feed industry with plant protein in the form of cake and sprat.

In the interest of raising the nutritional value of mixed feed, importance is also attached to using feed of animal origin: meat and bone meal, fish meal, dry skim milk and others. Unfortunately, many medium and small enterprises of the meat processing industry do not have utilization departments and units for the production of meat and bone meal and thus many valuable waste products obtained during the slaughtering and processing of cattle are not being utilized for this purpose.

Dry skim milk could become an important source for augmenting the protein raw material resources. Enterprises of the dairy industry are returning more than 20 million tons of skimmed milk (65 percent of the yield) to the kolkhozes and sovkhoses, which is not being utilized in the correct manner. If the processing of 10-15 percent more skim milk is organized in industry, the production of 300,000-400,000 additional tons of dry milk will be ensured. This dry milk could be used for producing mixed feed for young stock and also for preparing a whole milk substitute for feeding to calves and young pigs.

The fishing industry is supplying the trade network with unprocessed fish. The waste products from such fish are not being used for food purposes. Rather, they are being wasted, despite the fact that they constitute a reserve for the production of fish meal. Experimental work is being carried out in connection with the processing of shellfish, of which there are tremendous reserves to be found in the seas and oceans, into feed meal. But the production of meal from shellfish is still very expensive. The mass production of such meal must be organized in the near future. This will make it possible to lower the production costs for feed products and enable us to satisfy the requirements of the mixed feed industry.

The creation of a stable feed base for livestock husbandry requires effort not only on the part of agricultural workers but also workers attached to other national economic branches (meat, dairy, food, fishing, microbiological and chemical industries), all of whom ensure industrial feed production using protein raw materials for the production of high quality mixed feeds.

COPYRIGHT: Izdatel'stvo "Kolos", "Ekonomika sel'skogo khozyaystva", 1979

7026

CSO: 1824

LIVESTOCK FEED PROCUREMENT

BRIEFS

TIMBER WASTE FOR FEED--This year procurement of coniferous vitaminous meal has been organized on an industrial basis in Primorye. Thus lumberjacks will henceforth also procure feed. Excellent feed for livestock is derived from tree branches cut by motor saws with the aid of special crushers and grinding machines installed at skidding grounds. Addition of this feed to livestock feed rations will make it possible to protect young livestock from avitaminosis and raise their productivity. [Vladivostok Domestic Service in Russian 0930 GMT 5 Mar 80 OW]

CSO: 1824

LIVESTOCK

LIVESTOCK WINTER MAINTENANCE REVIEWED

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 1, Jan 80 pp 24-25

[Article by S. Abishev, scientific secretary of the section on livestock farming and veterinary medicine of VO [All-Union Association] of VASKhNIL [All-Union Lenin Academy of Agricultural Sciences]: "Responsible Period for Livestock Farmers"]

[Text] In fulfilling the resolutions of the 11th Plenum of the Central Committee of the Kazakhstan CP, "On Measures to Increase the Production and Raise the Quality of Feeds for the Continued Development of Livestock Farming in the Republic in the Light of the Requirements of the July 1978 Plenum of the CPSU Central Committee," farm workers have begun the realization of goals of the last year in the 10th Five-Year Plan. A responsible period has begun for them--the overwintering of livestock is in progress. The fulfillment of the five-year plan as a whole depends greatly on the increase of the growth of the herd and of the productivity of animals during the stall maintenance period. The directors of enterprises and livestock specialists must mainly be concerned with replenishing forage reserves. They must organize the proper and efficient utilization of feed on the basis of the recommendations and proposals of scientific institutions.

As of 1 October 1979 the number of cattle in the republic's enterprises increased by 100,000 head as compared with the same period a year ago. Sheep and goats increased by 1 million head. According to preliminary calculations, this year kolkhozes, sovkhoses, special economic associations in the republic are maintaining over 6 million head of cattle, 30 million sheep, about 2 million hogs, 900,000 horses and camels and over 20 million birds.

Last year in almost all rayons in the republic fairly good conditions existed for the procurement of all types of feed. Agricultural workers made great efforts to accumulate hay and other coarse feeds and to increase the stores of haylage and silage.

In the enterprises of Tselingradskaya, Severo-Kazakhstanskaya, Kokchetavskaya, Karagandinskaya, Dzhezkazganskaya, Ural'skaya and Vostochno-Kazakhstanskaya oblasts a great deal has been done to procure feeds. According to data from the Ministry of Agriculture of the Kazakh SSR in the republic as a whole 15.9

million tons of hay were procured, or 8 percent more than planned. Most feeds were brought to the place of overwintering, 3.8 million tons of haylage were procured. This surpasses the plan by 577,000 tons, or 175 percent.

The work to produce vitamin-grass meal proceeded better. In the republic as a whole almost 55,000 tons more than in 1978 were procured. Almost all of the sovkhoses and kolkhozes of Dzhezkazganskaya, Karagandinskaya, Kokchetavskaya, Severo-Kazakhstanskaya, Turgayskaya and Tselinogradskaya oblasts procured the necessary feeds in above-plan quantities, especially grass meal. The kolkhozes and sovkhoses of Kokchetavskaya, Severo-Kazakhstanskaya, Tselinogradskaya and Taldy-Kurganskaya oblasts did a great deal to procure it.

In the republic about 24 million tons of silage mass and 288,000 tons with added chemical concentrates have been stored.

At a meeting of the party-economic aktiv of Kazakhstan in September of 1976 the Secretary General of the CPSU Central Committee, Comrade L. I. Brezhnev, said, "If the country had at least a 20-25 percent emergency fund of coarse and succulent feeds, livestock farming would develop with more assurance. We could insure it against losses due to natural calamities that occur in some years. This naturally affects the supplies of meat, milk and other products for the population." In following these directives of Comrade L. I. Brezhnev and the decisions of the 11th Plenum of the Kazakhstan CP Central Committee the enterprises of Tselinogradskaya Oblast fulfilled the plan for the procurement of hay by 140 percent; of Severo-Kazakhstanskaya Oblast--by 135 percent; and of Kokchetavskaya Oblast--by 126 percent. In Karagandinskaya, Dzhezkazganskaya, Ural'skaya, Vostochno-Kazakhstanskaya and Severo-Kazakhstanskaya oblasts double the amount of haylage that was planned was actually produced.

One of the more important conditions for increasing the production of milk, meat, wool and other livestock products is raising the nutritive value and assimilation capacity of feeds by processing them before feeding them to the animals. In this a large role must be played by the feed shops that exist on farms. They must produce full-ration feed mixtures and granulated and briquette feeds. All farms must prepare feed shops for work during winter conditions and all feed-preparation technology must operate at full capacity.

The feed shops of Turgayskaya, Dzhambul'skaya and Chimkentskaya oblasts were well-prepared for work during the winter period. However, insufficient attention is given to this question in the enterprises of Aktyubinskaya Oblast, where only 64 percent of the existing feed-production shops were in operating condition. Over 30 percent of feed shops were not prepared for work in Karagandinskaya, Semipalatinskaya and Taldy-Kurganskaya oblasts.

In our country scientists in cooperation with the workers of kolkhozes and sovkhoses have developed many methods of treating straw--crushing, wetting with water or a salt solution, steaming, roasting, adding various supplements, etc. The processing of straw increases the amount that is eaten

by animals and raises the nutritive value of this feed. As scientific research shows, if straw is steamed animals are more likely to eat it. Processed straw is best fed in a mixture with other feeds--hay, root crops, concentrates and others.

The data of scientific research demonstrates that the basic factor determining the full-value of feeding is not the extensive selection of feeds in the ration but the level and ratio of nutrients that secure the high rate of productivity in animals. For example, according to data from VIZh [All-Union Scientific Research Institute of Livestock Breeding], a cow with an average daily milk yield of 16 kilograms of milk requires a ration consisting of 23-24 kilograms of haylage and 4-5 kilograms of concentrated feeds daily. Average daily weight gains of 700-800 grams are secured through feeding calves 10 kilograms of haylage and 1 kilogram of concentrates.

High-quality haylage enables farmers to replace multi-component livestock rations that include hay, silage and root crops; thereby decreasing expenditures for the production of milk, meat and other livestock products.

Nevertheless, according to the data of the Northern NII [Scientific Research Institute] of Livestock Farming, many enterprises in the republic do not always adhere to the recommended technology for procuring haylage. The mowed grass is frequently stored at a moisture capacity of 70-75 percent instead of 50-55. In this case the preservation of feeds occurs according to the type of silage, with almost a complete expenditure of sugars to acids, whereas the aim of eliminating shortages of protein and sugars is not achieved. Research by the Northern NIIZh [NII of Livestock Farming] has established that haylage that is prepared from cereal-legume grass mixtures with a moisture of 56 percent has a more positive effect on the exchange and utilization of nutrients in the organism and on the productivity of animals.

The proper composition of rations is very important for the more effective utilization of feeds. Science and progressive experience have proven that if there is a shortage of certain nutrients in the ration, others are consumed in larger quantities. Thus, if there is a shortage of protein in the ration the expenditures of feed per production unit increase. The effective utilization of feeds is greatly encouraged by the evaluation of their nutritive value not according to tables but according to actual data that is based on analyses made in agrochemical laboratories.

In the RSFSR the organization of work to control the quality of feeds is the responsibility of the State Agrochemical Service. The main task of the laboratory is to control the technology of feed production. This enables us to become involved in the procurement process in time. The organization of such a service to control the quality of feeds enabled many oblasts to raise the nutritive value of hay. The positive experience of organizing the examination of feed quality must be adopted by the enterprises of our republic.

lateness in harvesting feed crops and violations of the technology of hay procurement and the storage of haylage and silage affected the quality of feeds in a number of oblasts. As a result the quality of feed in some enterprises remains low. For example, in Vostochno-Kazakhstanskaya Oblast of the more than 120,000 tons of hay that were checked about 17 percent could not be classified; in Ural'skaya Oblast--29 percent.

During the winter maintenance period, in addition to supplying full-value feed uninterruptedly, to preserving livestock and to raising its productivity, livestock farmers have the task of significantly increasing the quantity of livestock. In this one of the most important conditions is providing the herd comfortable facilities. A warm feedlot is a guarantee of high productivity in animals and of economy in feed. Many enterprises have successfully completed the repair and preparation of livestock facilities for overwintering. However, in some enterprises complications have arisen with the operational start of structures that are being built for the overwintering of animals. In the enterprise of Tselinogradskaya Oblast of the planned 9,300 livestock places for cattle in 1979 only a little more than 2,000 were put into operation.

The experience of past winters has shown that with a good organization of labor on farms, with the quality preparation of feeds for feeding and with the careful expenditure of feeds large amounts of production can be achieved. A high degree of organization on farms will enable farmers to significantly increase production and the sale of livestock products to the state during the winter period.

COPYRIGHT: "Sel'skoye khozyaystvo Kazakhstana"--"Qazaqstan auy1 sharuashylyghy" No 1, 1980

8228

CSO: 1824

LIVESTOCK

MEAT, MILK, FODDER PRODUCTION PROBLEMS IN ESTONIA

Tallinn RAHVA HAAL in Estonian 16 Jan 80 p 1

[Article by I. Kallas, chairman of the agriculture department of the Central Committee of the Estonian CP: "Further Achieved Success"]

[Text] A demanding year, characterized by poor weather, has passed for the farmer. In spite of difficulties, a fairly good harvest of grain, potatoes and vegetables was gathered in the republic's kolkhozes and sovkhoses. The state sale obligations of these products were successfully met.

Due to difficult conditions in the winter months, and also due to various deficiencies in work organizations in various localities, the production and marketing of animal products in 1979 did not develop everywhere according to plan, especially during the first half of the year. During the first six months of last year there was a shortfall of 18,349 tons in meat and 50,504 tons in milk compared to the 1978 first half. In the same period milk production per cow fell by 100 kilograms. The weight increments of animals on feeding lots were low per 24 hour periods; collectives were forced to sell to the state a large number of underweight animals.

During the second half of the year the decline in production was halted and the indicators of production intensity also improved. Collectives of all categories sold 14,205 tons more meat and 23,119 tons more milk to the state than during the comparable period of 1978. By the end of the year the 1978 level of animal production had been reached in the majority of the republic's rayons and collectives.

Compared to 1978 live weight meat production in our kolkhozes and sovkhoses increased during 1979 by 0.8 percent, but the production of milk and eggs remained practically on last year's level.

Since the production of milk has been higher than 1978 since August, 3,475 kilos per cow could be milked by 1 January--precisely the amount for 1978. Most milk per cow was obtained in the sovkhoses and kolkhozes of Paide rayon (3,858 kilograms), but this figure is 97 kilograms less than last year. The perpetual second place finishers from Viljandi, who became the "champions"

in the decline of milk production (minus 201 kilograms compared to 1978), surrendered their place to Rakvere rayon, where the production per cow reached 3,761 kilograms (3,675 kilograms in Viljandi rayon).

The least milk per cow was obtained in the kolkhozes and sovkhoses of Valga rayon, namely 3,035 kilograms, but this still means a progress for the year by 32 kilograms. The largest increases in milk production during the year were obtained in the collectives of Kohtla-Järve, Hiiumaa, and Pärnu rayons, by 128, 112 and 83 kilograms, respectively. Besides the Viljandi and Paide rayons, the milk producers of Kingissepp and Jõgeva rayons were also in the minus column.

Unfortunately, there were in 1979 almost 30 collectives in the republic, where not even 3,000 kilograms of average milk yield were obtained. A goal must be set to assure that this year there will be no collectives in that category.

But almost every rayon has collectives where for years milk production has been large: 4,000 to 5,000 kilograms per year, and where production could be increased last year as well. Thus, in the Paala kolkhoz of Viljandi rayon the average yield per cow was 5,113 kilograms for the year. The collectives of Paide rayon's "9th of May" kolkhoz, the Podrangu sovkhos, Rakvere rayon's Vaike-Maarja kolkhoz, the Vandra experimental sovkhos, Voru rayon's "Linda" kolkhoz and many other enterprises worked very well.

A great contribution toward the successes of our republic was made by our herd-growers. Once again there is reason to point out the excellent work of Leida Peips, the hero of socialist labor, and master milker of Viljandi kolkhoz. In a facility where division of labor has been implemented, she obtained from the cows of her group 498.6 tons of milk, 5,141 kilograms per cow. The best result as judged by the average yield per cow was obtained by the milker Tiit Peetri of Vandra experimental sovkhos with 8,166 kilograms. Excellent work was done also by the milkers Asta Romanovski and Anna Holdblom of Viljandi rayon's Vohma kolkhoz, by the milkers Helle Korge, Anne Uusna and Linda Turner of the same rayon's Paala kolkhoz, by the milker Anna Aaver of Rakvere rayon's "energy" kolkhoz, by the pig raisers Ainu Lepiste, Maria Bernatskaja, Antonina Tchoba and Leida Aben of the "Gagarin" exhibition sovkhos technicum, by the young herd manager Helmut Grossfurst of Kehtna exhibition sovkhos technicum, and by many others.

The managers of kolkhozes and sovkhoses, the specialists of husbandry, the party organizations must pay constant attention to the propagation of progressive work methods and experiences, the strengthening of the cadres and the raising of qualifications of herd growers. There are still many transient persons among the milkers who have to care for tens of highly valuable animals. Outstanding results can be expected and obtained only from highly qualified specialists.

Although farmers made serious attempts to meet the task of animal product supply during the last months of the past year, they were unsuccessful.

The plan for the supply of milk, as well as of animals and poultry was fulfilled to 99 percent, the plan for egg supply was fulfilled to 101 percent. Compared to 1978, the supply of meat and poultry decreased by two percent last year, that of milk by three percent, while the supply of eggs increased by two percent. The production and supply of meat was relatively better in the Harju, Kohtla-Järve, Rapla, and Valga rayons. During the year the amount of meat and poultry supply in these rayons increased by two to six percent. The state sale plan for meat was successfully met in the Voru, Alavere, Roela and Ranna sovkhoses, in the "First of May" kolkhoz of Valga rayon, the "Ninth of May" kolkhoz of Paide rayon, the Vahenurme kolkhoz of Pärnu rayon, the Vohandu and Kuldre kolkhoses of Voru rayon, and many other enterprises.

But at the same time 68 enterprises did not fulfill the firm plan for meat production. Such kolkhoses and sovkhoses exist in all rayons, except Pärnu.

It is heartening that during the second half of the year the daily weight increment and the market weights of the animals on feed lots increased significantly. In 1978 the daily weight increment of cattle on feed lots was 585 grams, of pigs, 425 grams. In 1979 these figures were 661 and 445 grams, respectively. The average weight of cattle being marketed was 431 kilograms last year (428 kilograms in 1978), the slaughter weight of pigs was 105 kilograms (98 kilograms in 1978). Not a single rayon fulfilled the state sale plan for milk last year. Only in the collectives of Valga and Polva rayon was more milk produced than last year, everywhere else less. One hundred three enterprises of the republic did not meet the plan of milk sale, including almost half the collectives of Harju and Viljandi rayons.

In many collectives the non-fulfillment of plans and tasks was caused by unfavorable weather conditions. But in many collectives all shortcomings are too easily blamed on the weather, discipline and sense of responsibility have weakened. In the current year everything must be done to fulfill the assumed obligations. This is exactly what the CPSU CC November plenum demands of the farmer.

But the tasks of the current year are considerably more extensive than those of 1979. This fact demands deliberate work from every enterprise even now. After all, in January and February the primary decision is made as to the number of marketed pigs during the last months of the year in the collective and the entire rayon. To increase the number of pigs a larger number of sows must be mated in the next weeks. It is clear that if we lack enough pigs for fattening in the second half of the year, we will not be able to meet the tasks for the production and marketing of pork.

The continued increase of animal production is largely dependent on the restoration of herds. In pig raising this work has been to a certain degree successful, as evidenced by the fact that last year 100 breeding sows produced 3 percent more offspring than in 1978. Since breeding sows and young sows were also mated 18 percent more than last year, the total number of hogs could be increased by 61,100 (7 percent) by 1 January.

The situation in cattle breeding is worse. In the last years the number of cattle in the collectives of the republic has not increased. Due to a widespread infertility only 76 calves were produced per 100 cows last year, even less in several collectives of Polva, Tartu, Valga and some other rayons. During 1979 the kolkhozes and sovkhoses of the republic produced 9,053 calves less than last year.

The deficiencies in the restoration of cattle are primarily caused by deficiencies in raising calves. Little attention has been paid to improving the feeding of calves and the development of their maintenance technology. The majority of the large farms does not have calving departments nor separate facilities for the calves. Due to a lack of modern calf barns, more than 70 percent of the calves are housed in old, refurbished buildings. During the current and also the future years considerably more attention must be paid to the care of the calves, because the solution of this problem determines how well we will be able to increase the production of beef and milk during the 11th Five-Year Plan.

There is presently enough work for the farmers. The shops are preparing machinery and tractors for the spring season. During maintenance of machinery particular attention must be paid to quality. The organizations of the Committee for Agricultural Production Technology must solve more efficiently the questions regarding supply of materials and spare parts. The preparation of seeding and planting materials and their development to a favorable sowing condition cannot be delayed. By 1 January there was on hand 111 percent of the planned amount of conditioned seed, of that 90 percent was seed of the I or II class. Seed potatoes also require constant supervision.

However, rural labor is currently focussed on the farms. Animal growers must during the winter utilize even the smallest reserves to increase the production of meat and milk. More attention than before must be paid to the more efficient use of feeding materials. From year to year the percentage of silage in the feed of cattle and hogs is increasing. This direction is not entirely correct. The basic proportion of cattle feed must be derived from high quality grasses. During the fattening of hogs also more potatoes and in the summertime grasses must be used. Food scraps and usable industrial byproducts are poorly used for animal feed. The Ministry of Agriculture of the Estonian SSR must show a greater initiative in the better solution of this problem.

The recently published directive of the CPSU CC, the Council of Ministers of the USSR, the All-Union Central Soviet of Labor Unions and the CC of the Komsomol, "On the Development of All-Union Socialist Competition Among Livestock Workers for the Increase of Livestock Production and Supply in the 1979/80 Winter," but also the appeals by the "Kungla" kolkhoz of Jogeva rayon and the Vandra experimental sovkhos of Parnu rayon to all livestock breeders of the republic, approved by the Central Committee of the Estonian

CP, must form the basis for work organization during the winter season for every rayon, every collective and every farm.

The first three winter months have been successful. From October to January 78 kilograms more milk was milked from every cow than in the same period of 1978. During the first ten days of January the average milk production per day has been almost one kilogram more than last year. The achieved success must be increased. The marking of the 110th anniversary of V. I. Lenin's birth and the 40th anniversary of the Estonian SSR must be a matter of honor and conscience of every agricultural worker.

9240

CSO: 1809

LIVESTOCK

INCREASING OUTPUT OF LIVESTOCK PRODUCTS IN LITHUANIA

Vilnius SOVETSKAYA LITVA in Russian 18 Jan 80 pp 1, 3

[Article: "Utilizing All Resources to Increase Agricultural Production Output"]

[Text] The Central Committee of the Lithuanian CP evaluated the work of the Raseynskiy Rayon party committee on the organization of overwintering for livestock and the utilization of internal reserves for increasing the production and sales to the state of animal products. The resolution notes that the party raykom, the rayispolkom, its agricultural administration and the party organizations of enterprises are performing certain jobs to organize the overwintering of livestock and to utilize existing resources to increase the production and procurement of livestock products during this period.

In all enterprises schemes have been developed for the distribution and storage of feeds. Feeds have been distributed according to types and groups of livestock and monthly plans for their consumption are strictly observed. Briquette equipment and shops for the production of mixed fodder existing in enterprises are being utilized. Coniferous meal and paste are used for livestock feed everywhere.

At the same time it was noted that there are considerable shortcomings in the rayon's enterprises regarding the organization of overwintering for livestock and the development of livestock farming in general. In 1979 in kolkhozes and sovkhoses gross milk production decreased by 9 percent in comparison with 1978; the sales of livestock and poultry decreased by 3 percent; the productivity of the dairy herd--by 346 kilograms. There was a significant drop in the average daily weight gain of livestock being fattened. In the Aryegala Horticulture Sovkhoz and in the Vosilishkis Sovkhoz only an average of 2,213-2,384 kilograms of milk were produced per cow, which is 655 and 629 kilograms less respectively than in 1978.

The party raykom, rayispolkom, its agricultural administration, party organizations and directors and specialists of enterprises did not fully utilize existing possibilities for the preparation and overwintering of

livestock, especially regarding the procurement and accumulation of a sufficient amount of feed for this period. Last year enterprises significantly underfulfilled plans for the production of all types of feed. As a result only 39 percent of the feed supplies were produced locally and 69 percent were brought [sic]. As of 1 January 1980 there were 4.7 quintals of feed in feed units for each standard head of livestock. This is 16 percent less than last year. In addition, a large portion of the procured feed is of low quality.

Despite the low level of feed supplies for livestock, not all farms pay the necessary attention to their effective utilization. In most enterprises feed is given to animals without preliminary preparations. It is practically never crushed, ground or steamed and feed mixtures are not prepared. In a number of enterprises possibilities are not being looked for to provide enough full-value feed for highly productive animals.

As a result of the irresponsible attitude of the zooveterinary service of the rayon and of individual directors and specialists of enterprises regarding the preservation and raising of livestock and also because of the small degree of demandingness of party raykoms and the party organizations of kolkhozes and sovkhoses, cattle plague among livestock was tolerated, especially among calves. In 1979 plague took an average of 18 percent of piglets and 8.4 percent of calves. A significant number of calves are written off and sold to kolkhoz farmers and sovkhos workers. In connection with this last year total losses comprised 22.1 percent, and in the Zhingsnis Pirmin and Nyamunas kolkhozes they even reached 42-57 percent.

In the rayon sufficient attention is not given to preserving the herd. As of 1 January 1980 in comparison with the same date in 1979 enterprises had tolerated a 2-percent decrease in the number of cattle. In nine enterprises the dairy herd had decreased. Last year the goals for the production of piglets remained unfulfilled in the rayon.

The party raykom and the party organizations of enterprises are not giving sufficient attention to the selection, distribution and training of cadres and to increasing party influence in the collectives of livestock farms.

Not everything has been done to secure cadres of livestock farmers, to raise their qualifications and to improve work conditions. In order to secure a normal work regiment enterprises are lacking about 13 percent farm workers. At the same time in recent years the plans for sending young people to vocational technical schools for training as livestock farmers have not been fulfilled. The necessary concern for raising the effectiveness of socialist competition is not demonstrated everywhere.

The shortcomings that were tolerated by the party raykoms, rayispolkoms, its agricultural administrations as well as by party organizations of enterprises regarding the status of feed production, work with cadres as well as the organization of overwintering of livestock had a negative effect on the level of productivity of livestock and livestock production output during the

stall period. During the fourth quarter of 1979 as compared with the same period in 1978 in the rayon's kolkhozes and sovkhoses gross milk production decreased by 14 percent and the productivity of cows--by 76 kilograms. During this period the average daily weight gain of hogs being fattened was only 278 grams; of cattle--464 grams. In the Bebirva and Taribinyu Kyalyu kolkhozes and in the Nemakshchyay Sovkhoz milk production was about one-third below the levels of last year for the overwintering period that has passed. All of this resulted in the fact that the national economic plan for the sale of milk to the state by all categories of enterprises in the rayon was fulfilled by 91 percent; in four years of the current five-year plan--by 99 percent. The plan for the procurement of livestock and poultry has been fulfilled by 88 and 95 percent respectively. Ten enterprises did not fulfill their plans for milk procurement last year. Ten enterprises did not fulfill their plans for the procurement of livestock and poultry.

The Central Committee of the Lithuanian CP noted that the Raseynskiy Rayon party committee, executive party committee and its agricultural administration did not take the necessary measures for preparing for and conducting the overwintering of livestock. The organizational work performed by them to find and use reserves for increasing the production and sale of livestock products to the state during the stall maintenance period is inadequate and does not meet the requirements of the July 1978 and November 1979 plenums of the CPSU Central Committee.

The party raykom, the rayispolkom and its agricultural administration, rayon production associations of Goskomsel'khoshtekhnika [State committee of the agricultural equipment association], party organizations and the directors and specialists of enterprises are obliged to eliminate the noted shortcomings in the shortest possible time. They must take effective measures to improve the organization of overwintering of livestock. They must not tolerate a drop in livestock productivity during this period as compared with last year. They must secure enough production and the sale of livestock products to the state at levels which are sufficient to fulfill the plans and socialist obligations of 1980.

In connection with this it is essential to secure the maximally-effective utilization of feeds, their efficient distribution among types and groups of livestock and to organize the feeding of animals in accordance with sample rations and the recommendations developed by the Lithuanian Scientific-Research Institute of Livestock Farming for the current winter period. Each enterprise must seek out possibilities for feeding sufficient quantities of full-value food to highly productive livestock. We must work on having all enterprises and farms crush, and grind feed and treat it if necessary so that all feed-production technology works at full capacity. Strict controls should be established over the preservation of feeds. Their deterioration and losses should not be tolerated.

It is essential to take supplementary measures to increase the production and sale to the state of milk. Each farm should institute daily controls

over average daily milk yield. Its marketability should be increased. Fuller use should be made of opportunities to increase the procurement of surplus animal products from the population.

Work should be strengthened to intensively produce meat. We must increase the average daily weight gain of livestock that is being fattened, the average weight of calves at delivery. Groups for the final fattening of cattle should be created everywhere and the cattle should be fattened intensively.

Each enterprise must preserve the quantity of cattle, especially cows and sows at levels no lower than last year's during the overwintering period. Enterprises must take all measures to increase the reproduction of calves and to improve the raising of sufficient quantities of heifers to replenish the herd with highly productive livestock. It is essential to achieve the goal of producing piglets in 1980, including in the first 6 months of the year.

Appropriate veterinary conditions in livestock farms should be maintained. Increased responsibilities should be placed on the zooveterinary service and on the directors and specialists of enterprises to preserve the livestock. Strict measures should be taken against individuals who tolerate cattle plague in calves and piglets.

The party raykom, rayispolkom, its agricultural administration and party, trade union and komsomol organizations of enterprises are obliged to begin socialist competition of livestock farmers for the organized overwintering of livestock in accordance with the resolution of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU [All-Union Central Trade Union Council], and the Central Committee of the Komsomol on this question. It is essential to provide incentives for livestock workers for the efficient utilization of feeds, for the preservation of livestock and for raising its productivity. The experience of the leaders should become accessible to all farm workers. There should be a maximal utilization of resources and possibilities for fulfilling socialist obligations during the period of overwintering of livestock as well as those for 1980 and the 10th Five-Year Plan in general regarding the production of livestock products and their sale to the state.

The raykom, rayispolkom and its agricultural administration, party organizations and the directors and specialists of enterprises must take effective measures to improve the selection and distribution of cadres for livestock farming and to utilize the winter period more fully to train them. More attention must be given to improving labor organization in production. Bolder moves should be taken to reorganize work on dairy farms with the aim of avoiding work during the nighttime period.

The party raykom and party organizations of enterprises must activate organizational and political-educational work among livestock farmers, take additional measures to increase the party members among them and send more communists, komsomol members and youth into this important production branch.

The Central Committee of the Lithuanian CP obliged the Alitusa and Kapsukas city committees, all party raykoms, rayispolkoms and their agricultural administrations and local party organizations of enterprises to strictly control the overwintering of livestock on a daily basis in every enterprise and on every farm in view of the shortage of feed supplies. It is essential to activate organizational and mass political work among livestock cadres and to strengthen them with communists, komсомol members and experienced specialists. In all labor collectives an atmosphere of creative productive work should be developed. All instances of mismanagement and carelessness should be cut short. Directors and specialists of enterprises should be given the personal responsibility for the status of each farm.

Socialist competition of farm workers must be directed at increasing animal production output, at raising the productivity of livestock, at fulfilling socialist obligations for the overwintering period and at fulfilling the plans and goals for the sale of milk, meat and eggs to the state in 1980 and in the 10th Five-Year Plan in general.

8228

CSO: 1824

REGIONAL DEVELOPMENT

BETTER INTRODUCTION OF SCIENTIFIC ADVANCES INTO AGRICULTURE

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 2, Feb 80 pp 2-3

[Article by B. P. Semenenko, Kirgiz SSR deputy minister of agriculture, chairman of the Republic Scientific and Technical Society of Agriculture: "Achievements of Agricultural Science Into Production"]

[Text] The July (1978) Plenum of the CPSU Central Committee, developing the agrarian policy of the party elaborated by the March (1965) Plenum of the Central Committee, worked out an overall program for the further intensification of agriculture, which makes it possible to reliably meet the country's growing needs for food and agricultural raw materials and to transform it into a highly developed sector of the socialist economy. An increase in the efficiency of scientific research and an acceleration of the introduction of its results into agricultural production are some of the most important conditions for a successful fulfillment of these tasks. Implementing the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures To Further Increase the Efficiency of Agricultural Science and To Strengthen Its Connection With Production," the scientific research institutions of the republic's Ministry of Agriculture intensified the work on fulfilling the overall programs for the major state scientific and technical problems of the 10th Five-Year Plan.

In 3 years of the 10th Five-Year Plan they completed the research on 109 sections of overall programs for the solution of key state problems and all-Union assignments. On the basis of the research results 43 proposals were recommended for introduction into agricultural production.

The Kirgiz Scientific Production Association of Farming completed the research on 52 sections, of which 19 were state assignments. A total of 27 proposals were recommended for introduction into production. The Kirgiz Scientific Research Institute of Farming developed and regionalized two highly productive winter wheat varieties: intensive winter-spring wheat and Erythrospermum 80 capable of producing up to 80 or 100 quintals of high-quality grain per hectare on irrigated land. The Lutescence 60 wheat, whose yield on dry land surpasses that of Bezostaya 1 by 10 quintals per hectare, was transferred for state testing.

The Tolkin spring barley intended for monofeed is being tested under the production conditions of high-mountain valleys. Three more winter barley varieties, that is, Altyndan, Zharkyn and Dshal, which provide a harvest of 60 to 70 quintals of grain per hectare with one moisture accumulation irrigation, were transferred for testing last year.

A highly productive noncracking pea variety, blue Issyk-Kul'skiy, noted for a high content of protein in the grain, was developed at the Issyk-Kul'skaya Experimental Breeding Station of the Kirgiz Scientific Research Institute of Farming. It was transferred for state testing in 1976.

The Kirgiz Scientific Research Institute of Farming made significant advances in the development of highly productive, new corn hybrids. A highly productive simple corn hybrid, Chuyskiy P-47, which yields 100 quintals of grain per hectare and more, was regionalized in our republic and in the Kabardino-Balkarskaya ASSR. The Chuyskiy P-466 corn hybrid, whose potential yield reaches 130 quintals per hectare, is considered promising. The Chuyskiy D-62 double interline corn hybrid yields 700 to 800 quintals of silage bulk with ears per hectare.

The experimental station for cotton growing of the Kirgiz Scientific Production Association of Farming transferred the highly productive Kirgizskiy 2 cotton variety, which is resistant to wilt and has high-quality fiber, as well as the highly productive, new variety Kirgizskiy poly-hybrid 19 regionalized at the Kirgiz Experimental Breeding Station for Sugar Beets in 1979, for state testing. Breeders at the Kirgiz Scientific Research Institute of Farming developed six regionalized grape varieties whose yield exceeds that of the standard by a factor of 1.5 to 2.

In the work of the Kirgiz Scientific Production Association of Farming an important place is assigned to investigations of the system of fertilizers in sugar beet, cotton and grain row crop rotations. Recommendations for the application of fertilizers to agricultural crops cultivated in the republic's basic soil and climatic zones were worked out on the basis of their results. The association scientists also developed systems of soil tillage and zonal techniques of cultivation and harvesting of the most important crops and recommended irrigation regimes for the republic's zones and a hydromodulus regionalization of irrigated land. Specific work was done on the development of agrotechnical, chemical and biological methods of controlling pests and diseases of agricultural crops.

The Kirgiz Scientific Production Association of Livestock Breeding completed the research on 31 sections, of which 16 were state assignments. On the basis of the research results 16 proposals were recommended for introduction into agricultural production. Significant work was done on the development of new and improvement of existing pedigree types and plant lines of farm animals. A highly productive line of the Tyan'-Shan' semifine-wool breed of sheep with crossbred wool was developed. Three new Australized lines of the Kirgiz fine-wool breed were established.

An Alay pedigree group of sheep with white semicoarse wool of the carpet type and a Kirgiz pedigree group of chickens recommended for the production of hybrid chicks at broiler factories were approved.

Extensive work was done on improving the pedigree and productive qualities of the Alatau cattle breed and six highly productive plant lines were developed. The Aulie Ata breed of dairy specialization was approved. A new technique of breeding calves eliminating losses of young stock due to gastrointestinal diseases and a method of freezing bull sperms in polypropylene lines increasing the rate of impregnation of cows by 12 to 15 percent were developed.

The annual rates of fodder consumption for various groups and types of animals were refined with due regard for their productivity and mineral and carbohydrate nutrition. Methods of intensive breeding and barn and pasture fattening of cattle and sheep were recommended. The main infectious and noncontagious diseases of farm animals inflicting the greatest damage on the republic's livestock breeding were studied and radical means and methods of preventing and treating them were developed. Therapeutic and preventive measures against hypodermosis and dyspepsia in calves and measures of controlling parasitic blood diseases in cattle were recommended. A new preparation "garmala" for the treatment of theirleriosis was proposed and recommendations for the prevention and treatment of anaerobic abomasum edema in lambs were worked out.

Significant work was done by the Kirgiz Scientific Research Technical Institute of Pastures and Fodder on the development of highly productive, new varieties of perennial cereal and leguminous grasses for meadow and pasture use and on the elaboration of techniques of developing irrigated and nonirrigated cultivated pastures and recommendations for a superficial and fundamental improvement of natural fodder land, its efficient utilization, field fodder production and other problems.

The scientific and technical community of the Soyuzvodavtomatika All-Union Scientific Production Association fulfilled overall programs for the major scientific and technical problems of the 10th Five-Year Plan. In 3 years of the 10th Five-Year Plan the association completed the research on eight subjects. A manual for planning facilities for the stabilization of the river bed process during a low-pressure dam water supply from rivers of the piedmont zone recommended for the planning of controlled inlet and diversion river beds on wide flood plain sections of mountain rivers in Central Asia was developed and efficient layouts of control structures under the conditions of a varying width of the flood plain and types of river bed processes were proposed. The conditions of calculation of spillways and revolvable structures at irrigation systems of the piedmont zone were determined, the operating indicators of existing structures were studied and improved designs of spillways and revolvable structures were developed and recommended for introduction.

The group of scientists at the association fulfilled the engineering and working plans for the subsystem of short-term forecasting of the runoff of the Chon-Kemin River and for the operational control of the passage of water from the Orto-Tokoy Reservoir for the purpose of increasing the water supply for irrigated land in the Chu Valley and the reliability of operation of hydraulic structures. An engineering plan and blueprints of the experimental production system of the central supervision and control of technological water distribution processes were issued. An automated system making it possible in an advisory mode to exercise automatic central supervision and control (with the controller's permission) of the water distribution process ensuring a saving of 10 to 15 percent of the water supplied through the canal and an increase in the water supply for irrigated land was established at the TUSH canal at the base of the Saratov minicomputer and the TIM-72 remote control system.

The republic's scientific and technical agricultural community also takes an active part in the fulfillment of the plans for the introduction of the achievements of science and new technology into production, exercising author's supervision and rendering practical help to farm specialists in the introduction of the results of completed research into kolkhos and sovkhos production. For example, 46 proposals on the completed scientific research of the Kirgiz Scientific Production Association of Farming were introduced into agricultural production in 1978. The (estimated) annual economic effect totaled 16.4 million rubles. The republic's kolkhoses sowed the Nutans 45 and Naryn 27 spring barley varieties developed at the Kirgiz Scientific Research Institute of Farming on more than 170,000 hectares, which comprised about 80 percent of the sown areas in the zones of their regionalization. Nutans 970 occupied hundreds of thousands of hectares in the neighboring oblasts of Kazakhstan. The winter wheat varieties developed at the institute were cultivated on almost 50,000 hectares.

The corn hybrids of the selection of the Kirgiz Scientific Research Institute of Farming occupied about 70 percent of the area sown with corn in the republic. In practice, all the area sown with sugar beets in our republic was allocated for Kirgizskiy polyhybrid 18.

More than 50 proposals based on the results of research by the scientists of the Kirgiz Scientific Production Association of Livestock Breeding are annually introduced into the republic's agricultural production. A total of 60 proposals were introduced in 1977. The (estimated) annual economic effect from the introduction of these proposals into production was about 6 million rubles. A total of 63 proposals were introduced in 1978 and the annual economic effect was 6.3 million rubles.

However, there are still many shortcomings in the work on the introduction of the achievements of science and new technology and of advanced experience into production. Not all the planned measures are introduced in a full volume. In 1978 in the system of the Kirgiz SSR Ministry of

Agriculture only 10 out of 19 measures of all-Union significance were fulfilled in a full volume. The production of pelletized and granulated feed, construction and reconstruction of irrigation systems for watering with the use of the Pregat and Dnepr sprinkling machines and storage of fruit in facilities with artificial cooling still lag considerably, soybean sowing is introduced slowly and so forth.

For these reasons in 1978 the republic's kolkhozes and sovkhoses failed to receive more than 2 million rubles. Nor were some measures planned for introduction fulfilled in a full volume in 1979. In Issyk-Atinskiy Rayon the sown new regionalized grain varieties comprised only 10.2 percent and in Alamedinskiy Rayon, 23 percent. In the latter the plan for the harvesting of grain crops with combines with a simultaneous grinding of straw was fulfilled only 26 percent.

Scientific achievements are introduced in an extremely unsatisfactory way on farms in Narynskaya Oblast. Last year the assignment for the sowing of new grain varieties was fulfilled 18.3 percent, introduction of crop rotations, 10.5 percent and irrigation with sprinkling machines and installations, only 2.5 percent. This should disturb all the members of the Republic Scientific and Technical Society of Agriculture. Our society must more actively participate in the work on the completion of unfinished research envisaged by the overall programs for the solution of the most important scientific and technical problems of the 10th Five-Year Plan ensuring the further development of agriculture.

COPYRIGHT: Izdatel'stvo "Ala-Too", 1980

11,439
CSO: 1821

REGIONAL DEVELOPMENT

ACCOMPLISHMENTS, TASKS IN BELORUSSIAN LIVESTOCK PRODUCTION

Minsk ZVYAZDA in Belorussian 10 Feb 80 p 1

[Article by P. Rusakov under rubric "ZVYAZDA's Commentary": "To Reach the Desired Goals"]

[Text] Farm workers had a difficult and complex job last year. They gave their all to procure the necessary quantities of feed for socially-owned herds despite unusually unfavorable weather conditions. Now, in the winter season, the farm collectives are striving to make maximum use of each kilogram of feed, to boost livestock productivity.

Many kolkhozes and sovkhoses are resolving this difficult task successfully. Excellent results, for example, were obtained by the stock farmers of Gomel'skiy Rayon. In early December they completed the annual plan and additional targets with respect to milk and meat sales to the state. And by the end of the year they had sent to the receiving stations another 3,000 tons of milk and 700 tons of meat. The same kind of fruitful work was done by the stock farmers of Slonimskiy, Volkovysskiy, Soligorskiy, and many other rayons. Since the start of stalling maintenance, high milk-herd productivity has been achieved, and weight gains of feed-lot stock have been rising.

All of this constitutes a businesslike and concrete response to the CPSU CC, USSR Council of Ministers, AUCCTU, and Komsomol CC decree on All-Union Socialist Competition among livestock workers to boost the output and procurement of livestock products in the 1979-1980 winter season. Many farm workers are making diligent and careful use of feeds.

These efforts are going very well in Ivanovskiy Rayon, where gross livestock product outputs were increased substantially last year. The stock farmers of Chashnikskiy Rayon are steadily overcoming their past lags. They managed to boost milk and meat output, and were among the first to complete the annual plan of sales to the state. It is typical that the results achieved last year are being strengthened now. The same stable

indicators are being achieved by the stock farmers of Mozyrskiy, Berezinskiy, Bobruyskiy, and other rayons.

The achievements of the leaders testify to the stock farmers' substantial capabilities. A most vital task today is that of consolidating our success, making good experience accessible to all kolkhozes and sovkhoses. Proper storage and rational utilization of feeds to ensure full-value animal rations must constitute the chief concern of kolkhoz and sovkhos officials and specialists, party organizations, and farm workers. It is essential to make thrifty, high-yield use of each kilogram of hay, silage, haylage, roots, and other feeds. This can be done if the feeds are properly prepared before being dispensed.

All of this is especially vital considering that many kolkhozes, sovkhoses, and many rayons have allowed milk and meat production to decline, have reduced average per-cow milk yields and weight gains of animals in the fattening and maturing stages. This is primarily because of serious mistakes and oversights in the organization of the winter season, the lack of necessary exactingness on the part of agricultural bodies, the low level of mass-organizational work, and poor discipline on the farms.

The trouble is that some of the farms did not prepare properly before winter; they paid no attention to stock production and tending. In many places, cattle farms have no feed shops. Animal specialists are not doing enough to conserve and make most effective use of feeds, even though less feed has been laid in per standard head than last winter.

The farms of Luninetskiy, Postavskiy, Buda-Koshelevskiy, Kletskiy, and a few other rayons are considerably behind in milk production.

Shortcomings are also considerable in the production and procurement of meat. To this day, officials and specialists of many farms have yet to restructure their work toward intensive fattening of cattle and hogs. This has resulted in reduced average daily weight gains, and quality indicators have declined. This is especially true of the kolkhozes and sovkhoses of Pruzhanskiy, Sharkovshchinskiy, Zhlobinskiy, Iv'yevskiy, and Chervenskiy rayons. Inadequate rations not balanced with respect to essential components have led to reduced weight gains, longer fattening times, inefficient use of feeds, and ultimately to substantial shortfalls in output and higher prime costs.

The Belorussian CP CC Plenum which was held in December of last year set forth the task of radically improving the situation in livestock farming and sharply boosting milk and meat production on the kolkhozes and sovkhoses. This will require organizing things immediately in order to make use of all reserves and capabilities to achieve the goal.

REGIONAL DEVELOPMENT

BELORUSSIAN PREPARATIONS FOR SPRING GRAIN OPERATIONS

Minsk ZVYAZDA in Belorussian 19 Feb 80 p 1

[Editorial: "Militant Readiness for Spring!"]

[Text] The grain farmer must never yield his post to anyone. The year round, day and night, he lives with the thoughts and concerns of the harvest. Now, for example, with winter upon us and the fields covered with a soft white mantle, the farmers have a lot of vital, urgent tasks. They have to store up and condition the seeds, collect and haul into the fields as much fertilizer as possible, repair all the cultivating, planting, and harvesting equipment, and prepare machinery cadres for two-shift operation.

Especially important in this regard is the initiative of the farm workers of Stolinskiy and Lyubanskiy rayons, who have taken on higher obligations with respect to exemplary preparations for the spring planting and challenged all grain farmers in the republic to launch socialist competition for a worthy greeting to the 110th anniversary of V. I. Lenin's birth, for successful completion of all plans and socialist obligations.

The experience of the right-flankers always finds fervent support. Clear evidence of that is the valuable initiative of the farm workers of Volkovysskiy Rayon on launching socialist competition to complete this year's plans and 10th Five-Year Plan ahead of schedule.

The BCP CC approved this patriotic initiative and called upon all obkoms, gorkoms, raykoms, oblispolkoms, and rayispolkoms, party, trade-union, and Komsomol organizations of the kolkhozes, sovkhozes, and enterprises of Belorussia's Sel'khoztekhnika, Belsel'khozkhimiya, and reclamation organizations to emulate the Volkovysskiy grain farmers in launching socialist competition to make fuller use of internal reserves and capabilities to boost volumes of production and procurement of grain, potatoes, meat, milk, and other farm products.

Indeed, the initiators have plenty to teach them. Despite last year's unfavorable, difficult conditions they produced 20 quintals of grain, 244 quintals of potatoes, and 319 quintals of sugar beets per hectare. The rayon not only completed the plans of the first four years of the five-year plan with respect to production and sales of all types of farm goods but also sent tens of thousands of tons above target to the state.

To multiply their grains and conquer new heights -- such is the goal the Volkovysskiy farmers have set for themselves. This year they intend to produce 35 quintals of grain, 250 quintals of potatoes, and 320 quintals of sugar beets per hectare. To this year's crop they intend to apply 500,000 tons of organic fertilizer, which comes out to 17 tons per hectare. All repairs on planting and cultivating machinery have been completed. Only first-class seed is to be used for planting. Machinery operators and field hands are upgrading their skills and qualifications. In short, everything necessary is being done to complete the grain planting in six working days, potato planting in ten, and sugar beets in four.

Grain farmers on Asnezhytski Kolkhoz (Pinskiy Rayon) have been setting an example of good management, up to today's standards. Last year they produced 44.8 quintals of grain per hectare. Average yields of over 40 quintals were produced by farmers on Pobeda Kolkhoz (Zhitkovichskiy Rayon), Progress Kolkhoz (Grodnenskiy), Kolkhoz imeni Shchors (Novogrudskiy), Kolkhoz imeni Gastela (Minskiy), and the Lyubanskaya Experimental Base (Lyubanskiy Rayon). Some 47 farms produced yields of more than 30, and 104 produced yields of 25 to 30 quintals per hectare.

The experience of these farms must be made accessible to all; it must find its way into literally every field. As CPSU CC Politburo Candidate-Member and BCP CC First Secretary Comrade P. M. Masherov noted recently during his meeting with the voters of the Lenin Election District in Minsk, "It is essential to learn to work under any conditions so that despite objective difficulties we can always ensure attainment of plan indicators as the essential minimal possible output level."

Today's level of material-technical provisions for the countryside, the much-increased knowledge and skill of farm workers, and the rich arsenal of advanced experience make it possible to carry out this task. This, the concluding year of the five-year plan, is especially crucial and intensive; it is necessary to produce at least 32 quintals of grain per hectare and raise the total harvest to 9 to 9.5 million tons.

Today, a staunch battle is underway in the republic to achieve these goals. A good example in this harvest campaign is being set by the grain farmers of Stolinskiy, Lyubanskiy, and Volkovysskiy rayons who have initiated socialist competition.

Plenty of shockwork watch teams can be named. They are found in each rayon, in each oblast. The right-flankers and leaders are setting a fast pace and presenting an instructive example for all workers, whose chief concern is to greet the spring season on time and in full readiness. Successful completion of this difficult task is facilitated by higher worker fervor and effective socialist competition, on an increasing scale. As a result, the collection and haulage of organic fertilizers in the republic are going much better now than last year. With a plan of 80 [sic] million tons, more than 40 million have already been hauled into the fields. Farmers in Vitebskaya Oblast are ahead of schedule in handling this job. Equipment is also being repaired in good time, and grain seed is being laid in.

In preparation for the spring planting, however, much remains to be resolved. Many of the kolkhozes and sovkhoses have not laid in all the grain seed they need, and there is not enough grain legume, flax, oat, buckwheat, and perennial grass seed. For example, buckwheat seed stock targets have been completed by only 50 percent in Brestskaya Oblast, 44 percent in Gomel'skaya, and 34 percent in Grodnenskaya. This means that people haven't prepared in a comprehensive and integrated manner in all places to go out into the fields. Consider Vitebskaya Oblast. Although organic fertilizer haulage is going successfully, some of the farms are neglecting to repair their cultivating machinery.

The spring season of the final year of the five-year plan needs militant, integrated preparations. This approach to the matter is demanded by the CPSU CC decree "Additional Measures To Prepare and Carry Out Spring Field Operations in 1980" and by the decisions of the 20 BCP CC Plenum. This will largely determine the future harvest and successful completion of the plans and socialist obligations of the final year of the five-year plan.

6854

CSO: 1824

REGIONAL DEVELOPMENT

BRESTSKAYA OBLAST FARM OPERATIONS, OUTPUT

Minsk ZVYAZDA in Belorussian 4 Mar 80 p 1

[Article by Belorussian CP Brestskaya Obkom First Secretary Ya. Ya. Sokolov]

[Excerpt] Farm workers are making a big contribution toward fulfillment of national economy plans. Thanks to the implementation of our party's agrarian policies, the material-technical base of the kolkhozes and sovkhoses is growing stronger, land is being reclaimed, agricultural concentration and specialization is developing. All this is having a strong impact on the end results. In the past four years compared with the same period of the previous five-year plan, for example, average annual outputs of grain have increased by 19 percent, potatoes by 13 percent, sugar beets by 12, vegetables by 21, milk by 27, meat by 32, and eggs by 89 percent. Vegetable and livestock output overall has increased by 25.7 percent, labor productivity by 32 percent. At the same time, national economy plans of sales of grain, potatoes, sugar beets, milk, meat, eggs, and other farm goods to the state have been substantially overfulfilled.

The results would undoubtedly be better if it had not been for the capricious weather of recent years, in particular the unprecedented summer drought in the Poles'ye. Despite this, however, under the leadership of the party organizations our farm workers manifested high organization, discipline, and expertise. They achieved per-hectare yields of 22.3 quintals of grain, 196 quintals of potatoes, 253 quintals of sugar beets. Their intensive efforts for a good crop demonstrated the political stability of our cadres, their ability to work creatively, their ability to carry out their mission successfully despite circumstances.

The best results in grain production were achieved by Ivanovskiy, Stolinskiy, and Kobrinskiy rayons.

The "second grain" [potato] harvest was gratifying. The Ivanovskiy potato farmers, for example, produced almost 250 quintals per hectare. The same and even bigger crops were raised last year by 52 farms in the oblast. Many kolkhozes and sovkhozes brought in good crops of sugar beets, flax, and fodder.

Good success was also achieved by workers in social livestock farming. The oblast fulfilled the 1979 economy plans with respect to sales of milk, meat, eggs, and wool to the state. Farm workers, and also city dwellers who helped out at the height of the haying season, did a great deal to replenish the feed base. Forest and swamp lands alone yielded more than 1.2 million additional tons of feed mass.

The grain farmers have set for themselves no less crucial tasks for this year, the finish line of the 10th Five-Year Plan. Inspired by the decisions of the 25th CPSU Congress and the November 1979 CPSU CC Plenum, and preparing a worthy greeting for the 110th anniversary of the birth of Vladimir Il'ich Lenin, they have pledged, this concluding year, to achieve per-hectare yields of 32 quintals of grain, 210 quintals of potatoes, 280 quintals of sugar beets, 5.2 quintals of flax fiber, and 190 quintals of vegetables. We plan to boost milk output to almost 500 quintals and meat to almost 120 quintals per 100 hectares of farmland and thereby ensure completion of plans of sales of all types of farm goods. Moreover, it has been decided to sell five to seven percent more milk and meat than plans call for.

6854

CSO: 1824

UDC 633.1.338.5

WAYS TO LOWER PRIME COST OF GRAIN DISCUSSED

Moscow ZERNOVOYE KHOZYAYSTVO in Russian No 3, Mar 80 pp 2-4

[Article by N.M. Studenkova and M.I. Sklyarova, candidates of economic sciences, All-Union Scientific Research Institute of the Economics of Agriculture: "Ways to Lower Prime Cost of Grain"]

[Text] Strengthening of the material and technical basis of grain farming, improvement of its technology and organization carried out in accordance with the decisions of the March 1965 Plenum of the CPSU Central Committee have insured a significant growth in the yield capacity of grain crops and in the gross production of grain, and an increase in labor productivity in this very important sector of agriculture. The change in these indicators during the years of the 8th, 9th, and 10th five-year plans on the average for all categories of farms is characterized by the following data (table 1, on the average per year).

Table 1

	1966- 1970	1971- 1975	1976- 1978	1973
Yield capacity (quintals/hectare)	13.7	14.7	17.0	18.5
Gross harvest (million tons)	167.6	181.6	218.9	237.2
State purchases (million tons)	66.0	67.6	85.4	95.9

During last year, a year that was unfavorable with respect to weather conditions for many regions of the country, the farmers harvested 179 million tons of grain.

During 1976-1978 the yield capacity of grains (minus corn) on the average per year was: 19.9 quintals per hectare in the kolkhozes and 13.6 quintals

per hectare in the sovkhozes. Its most significant increase in comparison with 1966-1970 was attained in the farms of the Moldavian SSR (83.8 percent), Lithuanian SSR (39.1 percent), Belorussian SSR (92.5 percent), Ukrainian SSR (31.2 percent), Georgian SSR (35.8 percent), Azerbaijan SSR (65.8 percent), Kirgiz SSR and the Armenian SSR (53.5 and 63.5 percent).

Despite the overall tendency of increasing the harvest of grain from one hectare in all republics the fluctuations in its level by years are very considerable, especially in regions of insufficient moisture. This does not provide stability of grain farming for the country as a whole.

A characteristic feature of its development in recent times has been the more rapid growth in investments per 1 hectare of grain plantings than in their yield capacity. Thus, the average annual sum of production outlays in terms of one hectare of harvested area in 1976-1978 by comparison with the average annual sum of these in 1966-1970 increased at the kolkhozes by 74.1 percent and at the sovkhozes by 61 percent, and the yield capacity during this period rose by 32.7 and 18.3 percent respectively.

The more rapid growth of production expenses in comparison with the yield capacity brought about a steady tendency of a rise in the prime cost of 1 quintal of grain. Thus, while on the average for the USSR in kolkhozes during 1966-1970 it was 4.87 rubles, and in 1971-1975 5.83 rubles, in 1976-1978 it was 6.15 rubles, and for sovkhozes of the USSR Ministry of Agriculture the prime cost was 5.3 rubles, 6.88 and 7.34 rubles, respectively. An analogous picture took shape in the majority of republics of the country. However it should be noted that in the 10th Five-Year Plan the rates of growth in the prime cost of 1 quintal of grain both in the kolkhozes and in the sovkhozes was reduced by comparison with the preceding five-year period. This was the result of a large increase in the yield capacity of grains and a rise in labor productivity. The gap in the rates of growth of production expenses and yield capacity was reduced: in the kolkhozes from 28.8 points in the Ninth Five-Year Plan to 5 points in 1976-1978, in the sovkhozes respectively from 28.9 to 5.1 points, and in some republics there was even a certain lowering of the prime cost. Thus, in kolkhozes of the Caucasus it was reduced by 11-14 percent in 1976-1978 by comparison with the Eighth Five-Year Plan, in the Uzbek SSR, the Tadzhik SSR and the Turkmen SSR it was reduced by 5-13 percent, and in the Moldavian SSR by 7 percent.

In connection with the growth in harvests of grain and the rise in its prime cost in the majority of republics the total sum of costs of kolkhozes and sovkhozes for its production during 1971-1978 increased by 5826 million rubles, or by 69.2 percent. A large part of this increase is comprised of the ever-growing expenditures for operation of equipment, for fertilizers and other expenditures, the make-up of which includes outlays for electric power, pesticides and meliorants, fees for the operation of agricultural aircraft to apply mineral fertilizers and for chemical

treatment of plantings, payments for state insurance of plantings and others. The average annual increase in expenses by items for production of 1 ton of grain (minus corn) is shown in table 2 (rubles).

Table 2

	1966-1970 год	1971-1975 год	1976-1978 год	1976-1978 год к 1966-1970 год (%)	Прогресс увеличения стоимости за счет ста- тей, затрат (%)
	(1)				(2)
(3) В колхозах					
(4) Себестоимость 1 т	48,7	58,3	61,5	126,3	26,3
(5) в том числе:					
(6) прямая оплата труда с начисле- ниями	13,4	11,4	10,4	77,6	-6,2
(7) семена	9,5	10,6	11,0	115,8	3,1
(8) удобрения	3,1	5,7	6,4	206,5	6,8
(9) горючее и смазоч- ные материалы	1,9	2,7	2,7	142,1	1,6
(10) амортизация ос- новных средств	4,6	5,9	6,2	134,8	3,3
(11) текущий ремонт основных средств	2,5	3,4	3,8	152,0	2,7
(12) прочие затраты общепроизводст- венные и обще- хозяйственные расходы	8,4	12,8	15,0	178,6	13,6
(13)	5,3	5,8	6,0	113,2	1,4
(14) В совхозах МСХ СССР					
(4) Себестоимость 1 т	53,0	68,8	73,4	138,5	38,5
(5) в том числе:					
(6) прямая заработ- ная плата с на- числениями	10,5	11,8	11,8	112,4	2,5
(7) семена	11,1	13,5	14,6	131,5	6,6
(8) удобрения	3,1	5,6	6,3	112,5	6,0
(9) горючее и сма- зочные материалы	2,0	3,4	3,3	165,0	2,5
(10) амортизация ос- новных средств	7,1	9,2	10,1	142,2	5,7
(11) текущий ремонт основных средств	5,9	7,1	7,5	127,1	3,0
(12) прочие затраты общепроизводст- венные и обще- хозяйственные расходы	6,6	9,9	10,6	160,6	7,5
(13)	6,7	8,3	9,2	137,3	4,7

Keys:

1. 1976-1978 in relation to 1966-1970 (%)
2. Increase, decrease (-) in prime cost owing to items, outlays (%)
3. In kolkhozes
4. Prime cost of 1 ton
5. Including
6. Direct payment for labor with extra payments

Key to table 2, continued

7. Seeds
8. Fertilizers
9. Fuel and lubricating materials
10. Amortization of fixed capital
11. Current repair of fixed capital
12. Other expenses
13. General production and general economic expenditures
14. In sovkhoses of the USSR Ministry of Agriculture

The data presented in table 2 show that the increase in the cost of production of grain in the kolkhozes and sovkhoses in the current five-year period, just as in previous years, is occurring mainly owing to the growth in material expenditures: in amortization deductions and current repair of fixed capital, expenditures for fertilizer, seeds and so on. In the sovkhoses, along with the material expenditures, also increasing per ton of grain are the expenditures for wages, which is determined by the advancing rates of growth of the wage level in comparison with the increase in labor productivity. In recent years in the kolkhozes an inverse ratio of these indicators has been observed (table 3, on the average for the USSR).

Table 3

(1) Годы	(3)			
	(2) В колхозах		В совхозах МСХ СССР	
	(4) произведено зерна на 1 чел.-ч (кг)	(5) прямая оп- лата 1 чел.-ч (коп.)	(4) произведено зерна на 1 чел.-ч (кг)	(5) прямая оп- лата 1 чел.-ч (коп.)
1966—1970	37	52	71	74,5
1971—1975	56	65	77	90,7
1976—1978 (6)	75	78	91	107
1971—1975 по от- ношению к 1966—1970 (%)	151,4	125,0	108,5	121,7
1976—1978 по от- ношению к (6)				
1971—1975 (%)	133,9	120,0	118,1	118,0
1976—1978 по от- (6) ношению к 1966—1970 (%)	202,7	150,0	128,2	143,6

Key:

1. Years
2. In kolkhozes
3. In sovkhoses of the USSR Ministry of Agriculture
4. Grain produced per 1 man-hour (kilograms)
5. Direct payment of 1 man-hour (kopecks)
6. in relation to....

Thus, the average annual productivity of labor during three years of the Tenth Five-Year Plan in grain farming of the country's kolkhozes was increased more than 2-fold in comparison with the Eighth Five-Year Plan, the direct wages of 1 man-hour were increased 1.5-fold, and in the sovkhoses the increases were correspondingly by 28.2 and 43.6 percent. This was attained owing to growth in the yield capacity and the level of mechanization of cleaning and drying the grain, harvesting and stacking the straw, and handling operations. For example, mechanization of harvesting and stacking of straw during 1971-1978 on the average for kolkhozes and sovkhoses was increased from 85 to 92 percent, and mechanization of loading it when removing it from the field was increased from 76 (in 1973) to 88 percent.

The growth in mechanization of production allowed the kolkhozes to reduce labor outlays per 1 hectare of grain plantings (minus corn) from 39 man-hours in 1966-1970 to 27 man-hours in 1976-1978, or by 30.8 percent, with a 32.8 percent increase in the yield capacity. In the sovkhoses with a smaller increase in the yield capacity growth (by 18.3 percent), the labor outlays per 1 hectare of grain plantings in 1966-1978 remained stable (on the average for the year 15 man-hours). Calculating per 1 ton of grain the direct outlays of labor during this period were reduced in the kolkhozes from 27 to 14 man-hours (by 48 percent) and in the sovkhoses from 14 to 11 man-hours (by 21.4 percent).

The reserves for decreasing expenditures in terms of 1 hectare of plantings and per 1 ton of grain are still rather large. In connection with the fact that at the present time a significant part of the work for its drying, cleaning and loading, and also for stacking straw, packing seeds and mineral fertilizers is not mechanized, much manual labor is expended to perform these jobs. In 1978 in kolkhozes about 70 percent of the grain was treated at model grain-cleaning stations and in the kolkhozes the figure was 80 percent, and the rest was treated on scattered machines with the use of manual labor (1-2 percent was cleaned manually).

It should be noted that the number of grain-cleaning machines has increased at the farms in recent years. However a significant proportion has low productivity and is not adapted for work combined with other machines. In addition, a large number of workers is required to service them. As a result, the expenditures for post-harvest treatment of grain come to about 30 percent in the total expenses for its production at many farms.

The shortage of highly productive grain-cleaning and drying units often holds back the work of the combines, leads to a loss of the cultivated crop, and to reduction of its quality and an increase in cost. With the acute shortage of manpower at many kolkhozes and sovkhoses the diversion of a large number of farmers for post-harvest treatment of grain hinders timely fulfillment of other field operations. Consequently, conversion of post-harvest treatment to a flow-line process with the use of highly productive grain cleaning and drying units is an important reserve for reducing the labor-intensiveness and prime cost of its production. The

experience of many front-ranking farms of Western Siberia and other regions of the country is confirmation of this. Thus, at the Altayskiy Sovkhoz of Altayskiy Kray, with the introduction of flow lines into production the labor outlays for processing 1 ton of grain were reduced from 3.1 to 0.5 man-hours, or by 6-fold. In addition the expenditure of physical and monetary means was reduced from 1.6 to 1.3 rubles, or by 18.7 percent.

In some regions it is expedient to perform these operations at grain-receiving enterprises.

As we have already said, in recent years there has been a sharp rise in expenditures for fertilizers put under grain crops. The proportion of fertilized plantings rose in the kolkhozes from 23 percent in 1965 to 68 percent in 1978, and in sovkhoses it rose correspondingly from 13 to 44 percent. On the average per year in 1976-1978 the amount of mineral fertilizers applied per 1 hectare in the kolkhozes was 59.3 kilograms per hectare d. w. [decimal system of weight] or 2.2-fold more than in the Eighth Five-Year Plan, and in the sovkhoses 40 kilograms per hectare d.w., or 2.3-fold more than in the Eighth Five-Year Plan. In addition the wholesale price of fertilizers rose from 98.4 rubles in 1970 to 106.5 rubles in 1978, which was caused by structural changes in the mineral fertilizers supplied to agriculture, by an increase in the share of concentrated forms and by the output of new forms of them. Fertilizers also became more expensive owing to expenditures for their packaging and packing in connection with the conversion to centralized delivery to the farms by transport from Goskonsel'khoztekhnika [State Committee For Agricultural Equipment].

The advancing growth in expenditure for fertilizer in terms of 1 hectare of grain plantings by comparison with the rise in the yield capacity brought about an increase in the expenses per 1 ton of grain everywhere. Thus, the expenditures for fertilizer in terms of 1 hectare in 1976-1978 on the average per year came to 13.6 rubles in the kolkhozes, or 2.8-fold more, and in the sovkhoses 8.6 rubles or 2.4-fold more than in the Eighth Five-Year Plan. Per ton of grain the figures were, respectively, 6.4 and 6.3 rubles, or 2-fold more than was expended in 1966-1970. However with more rational use of fertilizers an increase in their use under grain crops is one of the basic reserves for lowering the prime cost of grain. True, the demand of the farms for fertilizers, as determined by scientifically valid agrotechnical norms, still is not being satisfied, which is holding back the growth in yield capacity.

An increase in the effectiveness of fertilizers used under grains is limited also by the lack of uniformity in their delivery to agricultural enterprises, by the violations of the necessary proportions with respect to basic nutrients, by the unsatisfactory quality, the inadequate provision of the farms with machinery for their application and so on.

After the March 1965 Plenum of the CPSU Central Committee there was a significant improvement in the provision of grain farming with fixed

productive capital. Just during the years of the 9th and 10th five-year plans it was increased almost 2-fold in the kolkhozes and came to 247.8 rubles in terms of 1 hectare of grain plantings in 1978 (in the sovkhozes the figures were 2.7-fold and 208.8 rubles respectively). However the capital backing of this sector is still significantly below the norm, which hinders the completion of overall mechanization of production and growth in labor productivity.

In addition, the equipment employed in grain production is not used efficiently enough. Thus, during 1973-1977 the average annual number of tractors was increased by 16.2 percent in the kolkhozes and by 33.4 percent in the sovkhozes. Their daily output was increased by a total of 7.6 percent (from 6.6 to 7.1 standard hectares). The prime cost of tractor operations in terms of a standard hectare during these years almost did not change both in the kolkhozes and in the sovkhozes.

The daily output for a grain harvesting combine during 1971-1978 was reduced in the kolkhozes from 6.8 to 6.2 hectares (by 8.8 percent) and in the sovkhozes from 7.9 to 7.3 hectares (by 7.6 percent).

The main causes for the worsening in the utilization of tractors and grain-harvesting combines is the incomplete staffing of farms with machine operators, the inadequate skills level of a considerable number of them, and also the presence of serious shortcomings in the design and manufacture of the machinery, and the unsatisfactory organization of the repair base in the kolkhozes, sovkhozes and enterprises of Goskomsel'khoztekhnika. The lack of a number of machines necessary for completion of complex mechanization, and the inadequately efficient utilization of available equipment lead to violation of the agrotechnical deadlines for operations, to reduction of the yield capacity and to an increase in grain losses during harvesting, and to an increase in the prime cost of grain. According to an estimate by scientific research institutes, the annual losses of grain in the country's kolkhozes and sovkhozes just as a result of increasing the harvesting periods come to 15-16 million tons.

Thus, in order to reduce the prime cost of grain it is necessary to carry out a group of measures directed at increasing the yield capacity on the basis of further improvement in tilling of the soil and introduction of progressive technology of cultivating and harvesting grains, improvement of the organization of seed growing, of the use of equipment, mineral and organic fertilizers, and so on.

It should be noted in conclusion that in the majority of regions of the country grain farming is highly profitable. However in connection with the rise in the prime cost in recent years a steady tendency of reduction of this indicator has been determined. Thus, for the USSR as a whole the average annual profitability of grain production was reduced in the kolkhozes from 135.9 percent in 1966-1970 to 79.7 percent in 1976-1978

and in the sovkhoes from 72 to 61 percent, respectively. Preservation of this tendency in the future will have a negative effect on the economy not only of grain farming, but of other sectors also.

It is known that at the present time the economy of sectors with low-profit and sectors operating at a loss is being supported owing to the high incomes obtained from grain. The level of grain production and its prime cost are exceptionally important for the development of animal husbandry, since about half of the gross harvest of grain is expended for fodder. This is significant especially for such sectors as swine breeding and poultry breeding, where 60-90 percent of the feed rations are comprised of feed grain. Therefore reduction of the cost of production of grain under today's conditions is one of the most urgent problems of the further development of agriculture.

COPYRIGHT: Izdatel'stvo "Kolos", "Zernovoye khozyaystvo", 1980

10908

CSO: 1824

AGRO-ECONOMICS AND ORGANIZATION

ESTONIAN AGRICULTURE MINISTER INTERVIEWED

Tallinn SOVETSKAYA ESTONIYA in Russian 3 Feb 80 p 3

[Interview with Kharal'd Aleksandrovich Myannik, ESSR minister of agriculture, and Khaino Tynisovich Val'di, chairman of the State Committee for Supply of Production Equipment for Agriculture, by correspondents I. Koni and R. Remmel'-gee: "The Farm Sector: Years of High Effort"; date and place not specified]

[Text] Correspondents: Our first question is for the minister. Kharal'd Aleksandrovich, would you briefly discuss the ways in which party and government decisions of recent years on the agrarian question concerning the nature of basic trends in the development of the republic's agricultural production are being put into practice?

Myannik: The development of agriculture in the republic in its present stage is characterized by specialization and concentration. In recent years, much has been done in the area of industrialization and mechanization of labor both in livestock production and in field-crop production. The paramount objective is to intensify and increase efficiency in all areas of agriculture. But, before turning to the specific figures which describe our forward progress, I would remind the readers of SOVETSKAYA ESTONIYA that, of the four years separating us from the last election to the ESSR Supreme Soviet, two were characterized by extremely adverse weather conditions. But, despite the natural disaster of 1978, and the spring drought of last year when conditions for the growth of agricultural crops were extremely unfavorable, in the first four years of the 10th Five-Year Plan, as compared with the same period of the last Five-Year Plan, the average annual grain harvest in the republic increased from 765,500 tons to 1,094,700 tons, or by 43 percent.

Last year, the average harvesting of grains in the republic totaled almost 25 quintals per hectare. The average annual volume of purchases increased for all farming categories: for beef and poultry products—from 190,800 tons to 238,900 tons, or by 25.2 percent; for milk—from 927,000 tons to 1,099,900 tons, or by 18.7 percent; eggs—from 252.7 million units to 310 million, or by 22.7 percent.

Corr: How do you assess the results of the work of agricultural workers in the republic for last year?

Myannik: Before giving an evaluation for the republic as a whole, let's look at what our leading farms were able to accomplish. Agronomists of the kolkhozes, "Vambola," and "Paala," in Vil'yandiskiy Rayon realized an average of 41 quintals of grain per hectare, and on the sovkhos, "Olustvera," and the kolkhoz, "Nine May," in Paydeskii Rayon the figure was 38 quintals, while on many farms, the grain harvest totaled more than 35 quintals per hectare. As for potatoes, on the kolkhoz mentioned above/as published/, "Vambola," they gathered 310 quintals of tubers per hectare, while the average harvest in the republic is 178 quintals. As you see, the difference even between the average and best indicators is great, all the more so if one compares advanced operations with the less advanced. Roughly the same picture exists in the production of livestock.

On some farms, such as the kolkhozes, "Paala," in Vil'yandiskiy Rayon, "Nine May," in Paydeskii Rayon, and the sovkhos, "Pydrangu," the average annual milk yield exceeds 5000 kilograms, while on those less advanced--in this group we may include the sovkhos, "Ridala," and the kolkhoz, "Paala," in Iygevskiy Rayon, and a few others--they cannot as yet produce even up to the 3000 mark. The difference in daily weight gains of fattening animals and in delivery weight of meat cattle and hogs is so very great. Herein arises the paramount objective, and it concerns chiefly the Ministry of Agriculture, as well as regional organs and farm directors: to do everything possible to pull the less advanced up to the level of the average, and the average up to the level of the advanced.

One also must not forget about private garden plots belonging to rural residents, to which use about 10,000 hectares of land are devoted. We allot a significant amount of feeds and other resources to cattle owners, which means that we are justified in counting on an even larger output from the individual sector. And here, first of all, we should better organize purchases of meat, milk, eggs, fruits, and berries. Specifically in this regard, I see significant means for increasing the output of livestock production and improving the popular supply of meat and milk products. But, on the whole, last year can be considered successful if, in the bargain, one considers that it was incumbent upon us to eliminate the after-effects of a disastrous 1978.

Corr: How is agricultural specialization and concentration progressing in the republic, and is it affecting the output of products?

Myannik: I will begin with poultry production, where the greatest degree of specialization has been achieved: Seventeen farms produce in the public sector more than 98 percent of the eggs and 90 percent of the poultry meat. The raising of turkeys, geese, and ducks is totally specialized. And, it seems to me that it is precisely the specialization of this branch of livestock production that helps us to satisfy the demand for poultry eggs and meat.

The republic has 55 hog-raising complexes, with an annual hog production of 500 tons on each one. We are operating large-capacity combines such as those on the sovkhos imeni Gagarin, with a projected capacity of 54,000 hogs per year, and the Pyarnuskeya interfarm hog-raising operation, with a projected capacity of 48,000 hogs per year. And, there has not been a shortage of hogs in recent memory.

Important changes have also occurred in milk production--approximately 40 percent of our milk is produced on modern, mechanized super-farms. This has helped to increase labor productivity and to reduce labor costs for each quintal of product output from 5.6 man-hours in 1970 to 3.7 in 1978, and on the complexes--to 3 man-hours.

While engaged in solving such contemporary problems as concentration and specialization of production, we are, nonetheless, striving to maintain the old farms, renovating them, and, to the extent that it is possible, mechanizing them, while attaining a high labor productivity.

Corr: What are the major problems which agricultural personnel will be called upon to solve in the near future?

Myannik: One problem was discussed above--the catching up of backward farm operations. The further development of livestock production depends on the feed base. Therefore, the objective of specialists, farm directors, and the feed producers themselves is to adequately supply farms with high-quality feeds.

I would like to remind you that, under a determination of the Politburo of the CPSU Central Committee, our republic was allotted materials, equipment, and feed grains supplemental to the planning funds for the years 1978 and 1979. This aid has helped us to maintain livestock productivity at a reasonably high level. However, more farms should orient themselves to the use of their own local resources, inasmuch as they are still far from being fully exploited.

I could designate as a problem of the present time the organization of winter quartering of cattle and other stock. It has to be done in such a way as to obtain the maximum amount of milk, meat, and eggs per unit of feed. To this end, we must strictly adhere to all zootechnical and veterinary requirements, widely practice the treating of feeds prior to stock feeding, and provide standardized maintenance for cattle. The All-Union socialist competition among livestock producers will undoubtedly contribute to preparations for the wintering-over of cattle.

We must also actively prepare for the forthcoming spring sowing; carry it out in a shortened time span and at a high level of agrotechnical proficiency. Agricultural workers again last year possessed the means to assure themselves that success would follow where they can carry out each operation within the optimal time frame. In this area specifically, particular attention was paid to the recently published resolution of the CPSU Central Committee and USSR Council of Ministers, "Supplemental Measures for Preparation and Implementation of Spring Cultivation Operations in 1980."

Corr: In the current Five-Year Plan, much attention is given to rural construction, including both residential and production facilities. What kind of success has there been in this area?

Myennik: Within four years, 610,000 square meters of living space was put into service on kolkhozes and sovkhoses of the republic. Conditions favorable to individual construction on farm communities have been established: kolkhoz and sovkhos personnel can obtain important loans, and the farms aid builders with materials and transport.

We are also constructing a great many production facilities. However, our primary construction organization, the republic association, "Estkolkhozstroy," is not living up to its obligations to the farms—over four years, the builders have shorted us 40,000 square meters of living space and have been laggard in operationalizing dairy farms, hog compounds, and other construction projects. All of this acts as a drag on the sector's development.

Corr: Is it possible to form a prognosis for next year?

Myennik: Of course it is possible, although, as you know, the sum total of the labor of farm workers is also dependent upon the weather. But our best farms' many years of experience speak to the fact that even in years of the most inclement weather it is still possible to gather a decent harvest of cereal grains, and to lay in plenty of feed, which means that good milk yields and weight gains can be obtained.

The prognoses, from my point of view, are good: the sowing of winter grains in the fall was carried out in the optimal time frame, which establishes the preconditions for an excellent harvest of winter cereals. The plowing of winter fields was accomplished on time. Kolkhozes and sovkhoses have been supplied with powerful modern equipment—within just recent years, 1976-79, the republic has received 9,542 tractors, of which 1,361 are the powerful K-700A and T-150K models. In these same years, farms have been supplied with 5,322 trucks, 2,268 grain harvesting combines, 1,183 potato harvesting combines, 339 self-propelled feed-storing machines, model E-280, and 324 of the model E-301. Agricultural power installation in the last four years has increased by a factor of 1.3, the overall volume of mechanized operations—by 23 percent, and the labor productivity of machine operators—by 20 percent.

The public herd, especially the poultry flock and the hogs, has increased significantly. This establishes the necessary conditions for an increase in the output of products from livestock production.

Corr: Enterprises and production associations of Goskomsel'khoztekhnika/State Committee on Agricultural Production Equipment Supply represent a kind of first aid corps for agricultural workers. How has this aid been evidenced in the last four years?

Vel'di: Let's begin with land: during this time we turned over to the farms 196,800 hectares of improved land, and out of this figure, 120,600 hectares

were reclaimed from wetlands, while agricultural-technological operations were carried out on 76,200 hectares, 52,800 kilometers of drainage pipes were laid, and 254,300 hectares of crop land were made ready for production.

Peat growers produced more than four million tons of milled peat in the four years.

Corr: Goskomsel'khoztekhnika, besides "therapy" for the land, renders a great many other services to farms.

Val'di: Quite true: we are involved in supplying equipment to the farm sector, we are mechanizing farms, conducting maintenance work on the equipment, and repairing agricultural machinery...

A smooth transition of animal husbandry to an industrialized basis depends to a large extent on the level of mechanization existing on the farms. Last year alone, we were able to intensively mechanize 14,500 stockyards on neat cattle farms, and 24,200 stockyards on hog farms. In four years, 69,600 stockyards on neat cattle farms were mechanized, and 95,700 stockyards on hog farms.

Two years ago, 14 technical maintenance stations were set up for farms. Our specialist maintain two thirds of the milking equipment and almost all of the refrigeration equipment on farms.

Corr: What new types of services have been introduced with recent years?

Val'di: We have increased the volume of services and expanded the nomenclature list of our repair facilities--the Vil'yandiskaya raysel'khoztekhnika/rayon agriculture equipment association/is restoring the elevators of a new type of potato combine, and the Paydeskaya raysel'khoztekhnika has regulated the delivery of cultivators for the T-150K tractors, while Vil'yandiskiy and Valgeskiy workers are developing a number of assemblies and components for grain combines and imported power-harvesting combines, self-propelled mowers, etc.. The Tartuskiy experimental repair plant is initiating repair of the D-240 engines, the UAZ/Ulyanovsk Automobile Plant/-469 motor vehicles, and their associated equipment.

Our enterprises are presently carrying on the installation of new equipment. In the four years, we have turned over to kolkhozes and sovkhoses 27,557 pre-assembled and adjusted machines, which has allowed more than 500,000 man-hours to be saved from this work on the farms.

Currently, we are widely introducing the proven methods of the Raplaskaya raysel'khoztekhnika, which was the first in the country to change over to an effective system of supplying farms with equipment and spare parts. In a word, we are trying to do everything possible to aid the farmers of the republic in carrying out the tasks put before them--to increase the production of grains, potatoes, vegetables, meat, and milk. Just as workers of the fields and farms, Goskomsel'khoztekhnika personnel have entered into socialist competition in the successful accomplishment of the goals of the final year of the 10th Five-Year Plan.

END

SELECTIVE LIST OF JPRS SERIAL REPORTS

USSR SERIAL REPORTS (GENERAL)

USSR REPORT: Agriculture
USSR REPORT: Economic Affairs
USSR REPORT: Construction and Equipment
USSR REPORT: Military Affairs
USSR REPORT: Political and Sociological Affairs
USSR REPORT: Energy
USSR REPORT: International Economic Relations
USSR REPORT: Consumer Goods and Domestic Trade
USSR REPORT: Human Resources
USSR REPORT: Transportation
USSR REPORT: Translations from KOMMUNIST*
USSR REPORT: PROBLEMS OF THE FAR EAST*
USSR REPORT: SOCIOLOGICAL STUDIES*
USSR REPORT: USA: ECONOMICS, POLITICS, IDEOLOGY*

USSR SERIAL REPORTS (SCIENTIFIC AND TECHNICAL)

USSR REPORT: Life Sciences: Biomedical and Behavioral Sciences
USSR REPORT: Life Sciences: Effects of Nonionizing Electromagnetic Radiation
USSR REPORT: Life Sciences: Agrotechnology and Food Resources
USSR REPORT: Chemistry
USSR REPORT: Cybernetics, Computers and Automation Technology
USSR REPORT: Electronics and Electrical Engineering
USSR REPORT: Engineering and Equipment
USSR REPORT: Earth Sciences
USSR REPORT: Space
USSR REPORT: Materials Science and Metallurgy
USSR REPORT: Physics and Mathematics
USSR REPORT: SPACE BIOLOGY AND AEROSPACE MEDICINE*

WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality
WORLDWIDE REPORT: Epidemiology
WORLDWIDE REPORT: Law of the Sea
WORLDWIDE REPORT: Nuclear Development and Proliferation
WORLDWIDE REPORT: Telecommunications Policy, Research and Development

*Cover-to-cover

END OF

FICHE

DATE FILMED

21 April 1980

DD.

